

What is claimed is:

1. A print quality measuring method for comparing an image of reference paper and an image of an actual print to
5 create control data for controlling ink feeding rates of a printing machine, said method comprising:
 - a reading step for reading the image of the reference paper and the image of the actual print;
 - a representative color determining step for determin-
10 ing, from image data, a representative color characterizing the image of the print, and positions of the representative color; and
 - a calculating step for carrying out a comparative calculation of color data in the positions of said representa-
15 tive color of the image of said reference paper and color data in the positions of said representative color of the image of said print, to create the control data for controlling the ink feeding rates of the printing machine.
- 20 2. A print quality measuring method as defined in claim 1, wherein said representative color and the positions thereof are determined for respective sections corresponding to ink keys in each ink well of the printing machine.
- 25 3. A print quality measuring method as defined in claim 2,

wherein said image data has three color components, said representative color determining step being executed to classify pixels in each of said sections corresponding to ink keys according to tones of each of the three color components, and
5 determine said representative color and a position thereof from pixels included in a predetermined class interval.

4. A print quality measuring method as defined in claim 3, wherein said representative color determining step is executed to create a histogram with the tones of each of the
10 three color components of each pixel in each of said sections, and select said representative color and the position thereof from pixels included in a class interval of maximum frequency in said histogram.

15 5. A print quality measuring method as defined in claim 4, wherein the position of the representative color selected is a position having a maximum area formed by the pixels included in said class interval.

20 6. A print quality measuring method as defined in claim 5, wherein said image data for determining said representative color is one of platemaking data used at platemaking time, image data obtained by processing the platemaking data,
25 and image data obtained by reading said reference paper.

7. A print quality measuring method as defined in claim 1, further comprising:

a gray control color determining step for determining, from the image data, a gray control color expressed in a substantially achromatic color and positions of the gray control color;

wherein said operating step is executed to create the control data for controlling the ink feeding rates of the printing machine, by using results of a comparative calculation of color data in the positions of said gray control color of the image of said reference paper and color data in the positions of said gray control color of the image of said print, as well as results of the comparative calculation of the color data in the positions of said representative color of the image of said reference paper and the color data in the positions of said representative color of the image of said print.

8. A print quality measuring method as defined in claim 7, wherein only the results of the comparative calculation of the color data in the positions of said gray control color of the image of said reference paper and the color data in the positions of said gray control color of the image of said print are used when said representative color is devoid of one of said three color components.

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9. A print quality measuring method as defined in claim 7,
wherein the control data for controlling the ink feeding rates
of the printing machine is created by selectively using the
results of the comparative calculation of the color data in the
5 positions of said representative color of the image of said
reference paper and the color data in the positions of said
representative color of the image of said print, and the
results of the comparative calculation of the color data in the
positions of said gray control color of the image of said refer-
10 ence paper and the color data in the positions of said gray
control color of the image of said print, or by using a compro-
mise in an appropriate ratio of the results of the two
comparative calculations.

15 10. A print quality measuring method for comparing image
data obtained by reading an image of an actual print with
one of platemaking data used at platemaking time and
image data created from the platemaking data, to create
control data for controlling ink feeding rates of a printing
20 machine, said method comprising:

a reading step for reading the image of the actual
print;

a representative color determining step for determin-
ing a representative color characterizing the image of the
25 print, and positions of the representative color, based on one

of said platemaking data used at platemaking time and said image data created from the platemaking data; and

5 a calculating step for carrying out a comparative calculation of color data in the positions of said representative color of the image of said print and said representative color, to create the control data for controlling the ink feeding rates of the printing machine.

11. A print quality measuring method as defined in claim
10 10, wherein said representative color and the positions thereof are determined for respective sections corresponding to ink keys in each ink well of the printing machine.

12. A print quality measuring method as defined in claim
15 11, wherein each of said platemaking data used at platemaking time and said image data created from the platemaking data has three color components, said representative color determining step being executed to classify pixels in each of said sections corresponding to ink
20 keys, and determine said representative color and a position thereof from pixels included in a predetermined class interval.

13. A print quality measuring method as defined in claim
25 12, wherein said representative color determining step is

executed to create a histogram with tones of each of the
three color components of each pixel in each of said sections,
and select said representative color and the position thereof
from pixels included in a class interval of maximum
5 frequency in said histogram.

14. A print quality measuring method as defined in claim
13, wherein the position of the representative color selected
is a position having a maximum area formed by the pixels
10 included in said class interval.

15. A print quality measuring method as defined in claim
10, further comprising:

a gray control color determining step for determining
15 a gray control color expressed in a substantially achromatic
color and positions of the gray control color, based on one of
said platemaking data used at platemaking time and said
image data created from the platemaking data;

wherein said operating step is executed to create the
20 control data for controlling the ink feeding rates of the print-
ing machine, by using results of a comparative calculation of
color data in the positions of said gray control color of image
data obtained by reading the image of said print and said
gray control color, as well as results of the comparative
25 calculation of the color data in the positions of said

representative color of the image of said print and said representative color.

16. A print quality measuring method as defined in claim
5 15, wherein only the results of the comparative calculation of the color data in the positions of said gray control color of the image data obtained by reading the image of said print and said gray control color are used when said representative color is devoid of one of said three color components.

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17. A print quality measuring method as defined in claim
15, wherein the control data for controlling the ink feeding rates of the printing machine is created by selectively using the results of the comparative calculation of the color data in
15 the positions of said representative color of the image data obtained by reading the image of said print and said representative color, and the results of the comparative calculation of the color data in the positions of said gray control color of the image data obtained by reading the image of
20 said print and said gray control color, or by using a compromise in an appropriate ratio of the results of the two comparative calculations.

18. A print quality measuring apparatus for comparing an
25 image of reference paper and an image of an actual print to

create control data for controlling ink feeding rates of a printing machine, said apparatus comprising:

reading means for reading the image of the reference paper and the image of the actual print;

5 representative color determining means for determining, from image data, a representative color characterizing the image of the print, and positions of the representative color; and

calculating means for carrying out a comparative
10 calculation of color data in the positions of said representative color of the image of said reference paper and color data in the positions of said representative color of the image of said print, to create the control data for controlling the ink feeding rates of the printing machine.

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19. A print quality measuring apparatus as defined in claim 18, wherein said representative color and the positions thereof are determined for respective sections corresponding to ink keys in each ink well of the printing machine.

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20. A print quality measuring apparatus as defined in claim 19, wherein said image data has three color components, said representative color determining means being arranged to classify pixels in each of said sections
25 corresponding to ink keys, and determine said

representative color and a position thereof from pixels included in a predetermined class interval.

21. A print quality measuring apparatus as defined in
5 claim 20, wherein said representative color determining means is arranged to create a histogram with tones of each of the three color components of each pixel in each of said sections, and select said representative color and the position thereof from pixels included in a class interval of
10 maximum frequency in said histogram.

22. A print quality measuring apparatus as defined in claim 21, wherein the position of the representative color selected is a position having a maximum area formed by the
15 pixels included in said class interval.

23. A print quality measuring apparatus as defined in claim 22, wherein said image data for determining said representative color is one of platemaking data used at
20 platemaking time, image data obtained by processing the platemaking data, and image data obtained by reading said reference paper.

24. A print quality measuring apparatus as defined in
25 claim 18, further comprising:

gray control color determining means for determining, from the image data, a gray control color expressed in a substantially achromatic color and positions of the gray control color;

5 wherein said operating means is arranged to create the control data for controlling the ink feeding rates of the printing machine, by using results of a comparative calculation of color data in the positions of said gray control color of the image of said reference paper and color data in the positions of said gray control color of the image of said print, as
10 well as results of the comparative calculation of the color data in the positions of said representative color of the image of said reference paper and the color data in the positions of said representative color of the image of said
15 print.

25. A print quality measuring apparatus as defined in claim 24, wherein only the results of the comparative calculation of the color data in the positions of said gray
20 control color of the image of said reference paper and the color data in the positions of said gray control color of the image of said print are used when said representative color is devoid of one of said three color components.

25 26. A print quality measuring apparatus as defined in

claim 24, wherein the control data for controlling the ink feeding rates of the printing machine is created by selectively using the results of the comparative calculation of the color data in the positions of said representative color of the image of said reference paper and the color data in the positions of said representative color of the image of said print, and the results of the comparative calculation of the color data in the positions of said gray control color of the image of said reference paper and the color data in the positions of said gray control color of the image of said print, or by using a compromise in an appropriate ratio of the results of the two comparative calculations.

27. A print quality measuring apparatus for comparing image data obtained by reading an image of an actual print with one of platemaking data used at platemaking time and image data created from the platemaking data, to create control data for controlling ink feeding rates of a printing machine, said apparatus comprising:

reading means for reading the image of the actual print;

representative color determining means for determining a representative color characterizing the image of the print, and positions of the representative color, based on one of said platemaking data used at platemaking time

and said image data created from the platemaking data; and
calculating means for carrying out a comparative
calculation of color data in the positions of said representa-
tive color of the image of said print and said representative
5 color, to create the control data for controlling the ink
feeding rates of the printing machine.

28. A print quality measuring apparatus as defined in
claim 27, wherein said representative color and the positions
10 thereof are determined for respective sections corresponding
to ink keys in each ink well of the printing machine.

29. A print quality measuring apparatus as defined in
claim 28, wherein each of said platemaking data used at
15 platemaking time and said image data created from the
platemaking data has three color components, said
representative color determining means being arranged to
classify pixels in each of said sections corresponding to ink
keys, and determine said representative color and a position
20 thereof from pixels included in a predetermined class
interval.

30. A print quality measuring apparatus as defined in
claim 29, wherein said representative color determining
25 means is arranged to create a histogram with tones of each

of the three color components of each pixel in each of said sections, and select said representative color and the position thereof from pixels included in a class interval of maximum frequency in said histogram.

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31. A print quality measuring apparatus as defined in claim 30, wherein the position of the representative color selected is a position having a maximum area formed by the pixels included in said class interval.

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32. A print quality measuring apparatus as defined in claim 27, further comprising:

gray control color determining means for determining a gray control color expressed in a substantially achromatic color and positions of the gray control color, based on one of said platemaking data used at platemaking time and said image data created from the platemaking data;

wherein said operating means is arranged to create the control data for controlling the ink feeding rates of the printing machine, by using results of a comparative calculation of color data in the positions of said gray control color of image data obtained by reading the image of said print and said gray control color, as well as results of the comparative calculation of the color data in the positions of said

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representative color of the image of said print and said representative color.

33. A print quality measuring apparatus as defined in
5 claim 32, wherein only the results of the comparative
calculation of the color data in the positions of said gray
control color of the image data obtained by reading the
image of said print and said gray control color are used
when said representative color is devoid of one of said three
10 color components.

34. A print quality measuring apparatus as defined in
claim 32, wherein the control data for controlling the ink
feeding rates of the printing machine is created by
15 selectively using the results of the comparative calculation
of the color data in the positions of said representative color
of the image data obtained by reading the image of said
print and said representative color, and the results of the
comparative calculation of the color data in the positions of
20 said gray control color of the image data obtained by reading
the image of said print and said gray control color, or by
using a compromise in an appropriate ratio of the results of
the two comparative calculations.